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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,462

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1733

7590

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EXAMINER

TRIEU, THAI BA

ART UNIT

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3748

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,462	<b>Applicant(s)</b> AROV, ANATOLY	
	<b>Examiner</b> Thai-Ba Trieu	<b>Art Unit</b> 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/07/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is in response to the Amendment filed on April 07, 2008. Applicant's cooperation in correcting the informalities in the drawing and specification is appreciated. Applicant's cooperation in amending the claims to overcome the claim objections relating to informalities is also appreciated.

Claims 1-5 were amended; claims 6-9 were cancelled; and claims 10-13 were newly added.

Applicant's arguments, see pages 6-9, filed on April 07, 2008, with respect to the rejections of claims 1-9 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

### ***Claim Objections***

Claim 10 is objected to because of the following informalities:

- In claim 10, line 3, "**a**" before "**at least one rotary valve element**" should be deleted (*for correcting grammatical error*).
- In claim 10, line 6, "**rotates**" should be replaced by – **rotating** -- (*for correcting grammatical error*).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 and its dependent claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- The recitation of "at least one rotary valve element mounted within the housing and outside the cylinder" renders the claims indefinite, since it is not clear that at which location the rotary valve element is to be disposed. Applicant is required to clarify or to revise the claimed limitation.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 1, 5/1, 10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (Patent Number 3,797,237).***

**Regarding claims 1 and 5/1,** Kamiya discloses an engine or pump comprising:

at least one toroidal cylinder (26, 26a, 26b),

two impellers (9) with radial vanes rotatably mounted in said cylinder (26, 26a, 26b) with said impellers (9) cooperating with said cylinder to define working chambers (16, 17) between adjacent vanes (5, 6),

each of said impellers including to one side thereof at least one rotary valve element (9, 10) which rotates with each of said impellers (9) and selectively opens and closes passages (11, 12, 14, 15) in said cylinder housing (26, 26a, 26b) to said working chambers (16, 17) for inletting (11, 12) and exhausting (14, 15) a working media; said rotary valve elements (27, 28) cooperating with said housing such that the position of each of said valve elements defines media flow through said engine or pump (See Figures 1-6d and 8-9, Columns 3-5, lines 1-67, and Column 6, lines 1-8);

wherein each valve element has a series of arcuate passages (11, 12, 14, 15) which connect said working chambers with ports in said housing to selectively open and close ports in said housing to said working chambers, each arcuate media passage (11, 12, 14, 15) including a port adjacent a vane of said engine or pump (See Figure 1).

**Regarding claims 10 and 13,** Kamiya discloses an engine or pump comprising:

at least one toroidal cylinder (26, 26a, 26b) contained in the cylinder housing (26, 26a, 26b),

two impellers (29) rotatably mounted to the cylinder housing (26, 26a, 26b), each of said impellers (29) having with radial vanes (5, 6) rotatably mounted in said cylinder (26, 26a, 26b) and

at least one rotary valve element (9, 10) mounted within the housing (26, 26a, 26b) and outside the cylinder, said impellers (29) cooperating with said

cylinder to define working chambers between adjacent vanes (5, 6), said at least one rotary valve element (9, 10) rotating with each of said impellers and selectively opens and closes passages (11, 12, 14, 15) in said cylinder housing to said working chambers (16, 17) for inletting (11, 12) and exhausting (14, 15) a working media; said rotary valve elements (9, 10) cooperating with said housing such that the position of said valve element defines media flow through said engine or pump (See Figures 1-6d and 8-9, Columns 3-5, lines 1-67, and Column 6, lines 1-8);

wherein each valve element has a series of arcuate passages (11, 12, 14, 15) which connect said working chambers with ports in said housing to selectively open and close ports in said housing to said working chambers, each arcuate media passage (11, 12, 14, 15) including a port adjacent a vane of said engine or pump (See Figure 1).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 2, 3/1-2, and 5/(2-3) are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (Patent Number 3,797,237), in view of Groeger (Patent Number 3,430,573).***

Kamiya discloses the invention as recited above; and further discloses a drive train (1,2). However, Kamiya fails to disclose a drive train having at least two elliptical gears.

Groeger teaches that it is conventional in the rotary piston apparatus art, to utilize a drive train having at least two elliptical gears (6, 7, 6a, 7a, 14, 15) controlling said impellers and wherein each elliptical gear rotates (6, 7, 6a, 7a, 14, 15) around a focal point and where gear parameters are defined as function of minimum vane opening allowing formation of four chambers in each toroidal cylinder (See Figure 2-7, Column 4, lines 32-71) .

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a drive train having at least two elliptical gears, as taught by Groeger, to provide an alternative drive train for the Kamiya device, since the use thereof would have improved the control of the fluid being delivered into or out of the engine/pump.

#### ***Allowable Subject Matter***

Claims 4/1, 4/2, and 4/3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Prior Art***

The IDS (PTO-1449) filed on April 7, 2008 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Response to Arguments***

Applicant's arguments with respect to claims 1-5 and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should



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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB  
May 30, 2008

/Thai-Ba Trieu/  
Primary Examiner  
Art Unit 3748